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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,894	10/03/2005	Gopalan Selvaraj	PAT 753W-2	5250
42534	7590	12/11/2008		
BORDEN LADNER GERVAIS LLP			EXAMINER	
Gail C. Silver			ZHENG, LI	
1100-100 QUEEN ST				
OTTAWA, ON K1P 1J9			ART UNIT	
CANADA			PAPER NUMBER	
			1638	
			NOTIFICATION DATE	
			DELIVERY MODE	
			12/11/2008	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipinfo@blgcanada.com
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Office Action Summary

Application No.

10/522,894

Applicant(s)

SELVARAJ ET AL.

Examiner

LI ZHENG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 26 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-17 and 20-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-17 and 20-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 11-17 and 20-29 are pending and examined on the merits.
2. Applicant's cancellations of claims 1-10, 18 and 19, amendments to claims 11 and 13, as well as additions of new claims 20-29 filed on 8/26/08 are acknowledged.

Claims 11-17 and 20-29 are examined on the merits.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. The rejections and objections that are not recited in this Office Action are considered as being withdrawn.

Specification

5. The specification remains objected to because the trademarks "GenomeWalker™" should be capitalized wherever they appear.

Claim Rejections - 35 USC § 112

Written Description

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6. Claims 11-17 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record stated in the Office action mailed April 10, 2008. Applicants traverse in the paper filed August 26, 2008. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that the claims have been amended to refer to RAFTIN1. Applicants further argue that a representative number of RAFTIN1 nucleotide sequences have been disclosed in the specification and others may be obtained through database search (response, page 10, 1st paragraph).

The Office contends that the specification only teaches taRAFTIN1a, taRAFTIN1b and taRAFTIN1d in wheat and osRAFTIN1 in rice. Both plants are monocot plants which do not represent all the plants. Although the specification identifies C-terminal moiety of RAFTIN1 sharing extensive homology to a BURP domain, such BURP domain is present in many other genes unrelated to RAFTIN1 group of genes. The argument that others may be obtained through database search is not persuasive because there is no evidence that those sequences are in the database and there is no guidance on what is considered to be a RAFTIN1 gene. Therefore the Office concludes that Applicants fail to demonstrate that they are in possession of the genus of RAFTIN1 gene family

Scope of Enablement

7. Claim 11-17 remain rejected and claims 20-29 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an RNA hairpin construct comprising a promoter operably linked to sense-oriented RAFTIN1 nucleotide sequence, an intron and an antisense-oriented RAFTIN nucleotide sequence, wherein RAFTIN1 is taRAFTIN1a in wheat, or osRAFTIN1 in rice, and wherein sense-oriented and antisense RAFTIN1 nucleotide sequences are at least 23 nucleotide sequences in length, as well as a transgenic rice plant comprising a plant transformation vector encoding said RNA hairpin construct, does not reasonably provide enablement for said RNA hairpin construct wherein the RAFTIN1 is any RAFTIN1 sequence with any length, or any transgenic plant or cells comprising said plant transformation vector. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims, for the reasons of record stated in the Office action mailed April 10, 2008. Applicants traverse in the paper filed August 26, 2008. Applicants' arguments have been fully considered but were not found persuasive.

Applicants argue that the specification provides a number of usable variations of RAFTIN1 nucleotide sequence and provides guidance on how to construct and use intron spliced hairpin constructs for inducing male sterility in plant (response, page 10, 2nd paragraph). Applicants further argue that there is

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no undue experimentation required to practice the invention (response, page 10, 2nd paragraph).

The Office contends that as discussed above, the specification only teaches taRAFTIN1a, taRAFTIN1b and taRAFTIN1d in wheat and osRAFTIN1 in rice. Further the specification only teaches that intron-spliced hairpin RNA using sense and antisense sequences of osRAFTIN1 or taRAFTIN1a effectively reduces osRAFTIN1 expression in rice. Gene silencing construct of instant invention requires sequence information about the RAFTIN1 gene(s) in a given plant. The instant invention claims generating any male sterile plant using any RAFTIN1 gene, whereas the specification only provides sequence information about four members of RAFTIN1 gene family from wheat and rice and only generates male sterile rice plant in which only one copy of RAFTIN1 gene is found. The specification also fails to provide guidance on how to produce male sterile plant when there are multiple copies of RAFTIN1 genes in a plant such as wheat. Still further, the claims are broadly drawn to a RAFTIN1 nucleotide sequence with any size, whereas Thomas et al. teach that the lower size limit required for targeting reporter transgene mRNA de novo using PTGS was 23 nucleotides of complete identity, a size corresponding to that of small RNAs associated with PTGS in plant and RNAi in animals. Therefore, in contrast to Applicants' assertion, undue trial and error experimentation would be required for one of ordinary skill in the art to screen through the multitude of non-exemplified sequences, either by using non-disclosed fragments of known RAFTIN1 genes as probes or by designing primers to undisclosed regions of known RAFTIN1

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genes and isolating or amplifying fragments, subcloning the fragments, confirming copy number of NAFTAIN1 gene in the plant, producing plant transformation vectors encoding RNA hairpin construct of NAFTAIN1 and transforming plants therewith, in order to identify those, if any, that when expressed have reduced expression of NAFTAIN1 genes and exhibit a male sterility phenotype.

Summary

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Zheng whose telephone number is 571-272-8031. The examiner can normally be reached on Monday through Friday 9:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stuart F. Baum/
Primary Examiner, Art Unit 1638